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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,983	11/25/2003	Michael John Padgett	771.012	6946
29637	7590	05/22/2006		
BUSKOP LAW GROUP, P.C. 1776 YORKTOWN SUITE 550 HOUSTON, TX 77056				
			EXAMINER SETLAK, ANDREW T	
			ART UNIT 2166	PAPER NUMBER

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/721,983	<b>Applicant(s)</b> PADGETT, MICHAEL JOHN	
	<b>Examiner</b> Andrew Setlak	<b>Art Unit</b> 2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/4/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the method of horizon binning from claim 2, the method of claim 3 which further specifies how the step of claim 1 (b) functions, and the further limitations to the method of claim 9 introduced in claim 11 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 4 & 8 are objected to because of the following informalities: These claims appear to be in improper Markush format since the terminating limitation of both claims is "combinations thereof". The use of "***comprise***" rather than "***are selected from the group consisting of:***" in a Markush claim format is not permitted. See MPEP 2173.05(h).

Alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. One acceptable form of alternative expression, which is commonly referred to as a Markush group, recites members as being "selected from the group consisting of A, B and C." See *Ex parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925). *Ex parte Markush* sanctions claiming a genus expressed as a group consisting of certain specified materials. Inventions in metallurgy, refractories, ceramics, pharmacy, pharmacology and biology are most frequently claimed under the Markush formula but purely mechanical features or process steps may also be claimed by using the Markush style of claiming. See *Ex parte Head*, 214 USPQ 551 (Bd. App. 1981); *In re Gaubert*, 524 F.2d 1222, 187 USPQ 664 (CCPA 1975); and *In re Harnisch*, 631 F.2d 716, 206 USPQ 300 (CCPA 1980). It is improper to use the term "comprising" instead of "consisting of." *Ex parte Dotter*, 12 USPQ 382 (Bd. App. 1931).

For the purposes of examination based on prior art the examiner will treat these claims as though they were in proper Markush format. Appropriate clarification or correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The limitation of performing horizon binning after the compilation step is preformed does not have adequate disclosure in the specification to enable one of ordinary skill in the art at the time of invention to perform said binning. The examiner notes that the applicant has mentioned horizon binning in passing within [¶ 0029] of the specification, however a mere mention is not enough to enable one of ordinary skill in the art at the time of invention to implement said binning.

Claims 3-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 3 refers to the step of claim 1 (b) of inputting the attribute file data, however it appears that this method is based on data from the attribute file, which is not created by the method of claim 1 until step (c). Lacking a description as to how data can be retrieved from an attribute file before the attribute file has been created in step (c) of claim 1 this limitation is not enabled such that one of ordinary skill in the art at the time

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of invention could make or use the invention. Claims 4 & 5 inherit the deficiencies of claim 3 from which they depend.

Lacking enablement in the specification a prior art search for claims 2-5 is precluded since it is unclear what limitations the applicant intended for these claims to represent.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the phrase "a narrow... range" renders the claim(s) indefinite because the claim includes elements not actually disclosed (those encompassed by "a narrow... range"), thereby rendering the scope of claims 1-12 unascertainable. See MPEP § 2173.05(d). Claim 13 resolves this deficiency.

Claim 1 recites the limitation "the horizon file" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim. It is unclear whether this horizon file is intended to refer to the horizon file data or some other previously unspecified horizon file, this confusion is brought about by the applicant's treatment of the attribute file data as being a separate entity from the attribute file. Claims 2-13 inherit this deficiency by means of dependency.

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Claims 1-13 are further rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: Claim 1 step (c) recites **"indexing from the attribute file data at corresponding geographic locations of the horizon file, forming an attribute file;"** it is unclear what data "from the attribute file data at corresponding geographic locations of the horizon file" is referring to and from which file data it is being retrieved, how it is being indexed, and how said indexed "attribute file data at corresponding geographic locations of the horizon file" are "indexed" to form an attribute file. Claims 2-13 inherit this deficiency by means of dependency.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. In order for a method to be statutory it must produce a useful, concrete *and* tangible result. Claims 1-13 fail to produce a useful or tangible result, merely performing a computation does not constitute a tangible result, in order for a result to be considered tangible it must be embodied on some physical medium which enables the asserted usefulness to be realized, unfortunately in this case it does not appear that any type of usefulness has been claimed either.

Further, claims 1-13 appear to be directed to software *per se*, with the recitation of data files in the claims it appears as though this method is intended for execution by an electronic processing device. As, such lacking embodiment on a tangible & enabling medium claims 1-13 are also rejected under 35 USC 101 as being directed to the non-statutory subject matter of software *per se*.

### ***Claim Rejections - 35 USC § 102***

All rejections put forth in this section under 35 USC 102 are based on the examiner's best interpretation of the ambiguities noted by the 35 USC 112 rejections.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 & 3-13 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,498,989 (henceforth referred to as Pisetski et al.).

Claim 1 is anticipated by Pisetski et al. as follows: **A method for deriving a seismic attribute file, comprising the steps of: (a) inputting horizon file data (C3:L40-47; C12:L-49-50); (b) inputting attribute file data (C3:L22-25); (c) indexing from the attribute file data at corresponding geographic locations of the horizon file, forming an attribute file (C12:L26-44 & C14:L34-37); (d) obtaining the gradient**



**of the horizon file data thereby producing a horizon vector file (C11:L65-C12:L10); (e) obtaining the gradient of the attribute file thereby producing an attribute vector file (C3:L25-29; C10:L40-61); and (f) performing a compilation of the horizon vector file and the attribute vector file to ascertain if attribute changes in a direction towards a surface datum for a narrow time and depth range are detected and measured (C13:L6-13; equation (13) shows a calculation for determining an adjusted time based on variable frequency content of the wavelets traveling along the horizon "C", thus all changes in duration are taken in to account, further all changes in the pressure gradient are also maintained when the relative pressure changes map is compiled with the corrected isochron map).**

Claim 6 is anticipated by Pisetski et al. as in claim 1, wherein the horizon file data comprises seismic travel times as Pisetski et al. do in C3:L40-47.

Claim 7 is anticipated by Pisetski et al. as in claim 1, wherein the horizon file data comprises depth values as Pisetski et al. do in C13:L27-30.

Claim 8 is anticipated by Pisetski et al. as in claim 1, wherein the attribute file comprises seismic reflection data as Pisetski et al. do in C3:L22-25.

Claim 9 is anticipated by Pisetski et al. as in claim 1, further specifying the usage of the dot product operation as a part of the compilation. The examiner wishes to point out that a dot product of two vectors is merely a method for computing a meaningful scalar product from the multiplication of a plurality of vectors, see C19:L31.

Claim 10 is anticipated by Pisetski et al. as in claim 9, further taking the dot product at each point of the map as anticipated by Pisetski et al. in C19:L43-C20:L4.

Claim 11 is anticipated by Pisetski et al. as in claim 9, further if no appropriate data is present for a given location no value will be returned for said location, Pisetski et al. anticipates this limitation by using explicit quantitative equations in their description of their method which do not allow for unknown inputs.

Claim 12 is anticipated by Pisetski et al. as in claim 1, further using geographic locations as the tid for the indexing. C12:L45-53 indicate that each field in the data arrays corresponds to a geographically identical location as evidenced by the fact that these matrices are used directly to create the intermediate and final output maps.

Claim 13 is anticipated by Pisetski et al. as in claim 1, further limiting that the range be less than 5%. Since equation (13) shows a calculation for determining an adjusted time based on variable frequency content of the wavelets traveling along the horizon "C", all changes in duration are taken in to account, even those which are much less than 5% down to the infinitesimally small floating point accuracy of the system which embodies the method of Pisetski et al..

### ***Information Disclosure Statement***

Applicants' Information Disclosure Statements, filed on 11/4/2004 have been received, entered into the record, and considered. See attached PTO-1449 forms.

### ***Conclusion***

The prior art made record of on form PTO-892 and not relied upon is considered pertinent to the applicants' disclosure.

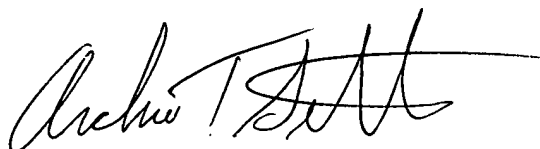
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**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Setlak whose telephone number is (571) 272-4060. The examiner can normally be reached on M-F 10:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571) 272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Andrew Setlak  
Patent Examiner  
5/10/2006



Leslie Wong  
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